ADEQ Arizona Department of Environmental Quality
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FACT SHEET

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Page Trowbridge Ranch Landfill

Google Earth aerial view of the Page Trowbridge Ranch Landfill

The landfill site occupies a total of 3.25 acres and consists of two areas: Area A (northern unit, 200 feet by 200 feet) and Area B (southern unit, 200 feet wide by 500 feet long). In both areas, wastes were placed in individual cells (pits) that were approximately 15 feet deep. A final cover system was constructed over each area to prevent percolation through the landfill. It includes a final earthen cover on top that supports native grass vegetation. The landfill is surrounded with a six-foot-high chain-link fence with barbed wire along the top. Culverts and storm water channels were installed to divert rainwater from the surface of the site to minimize percolation into the subsurface soil.

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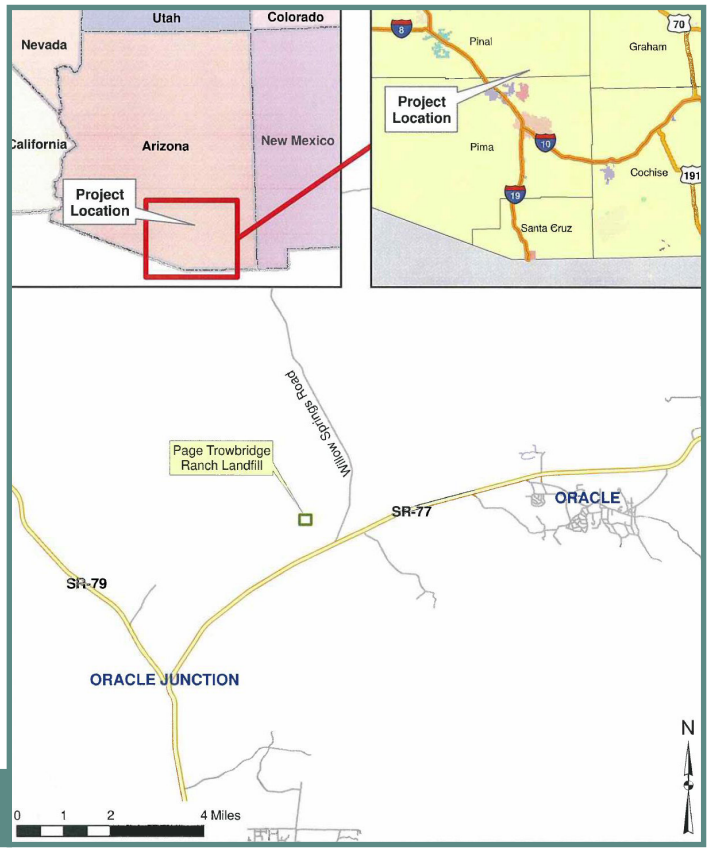
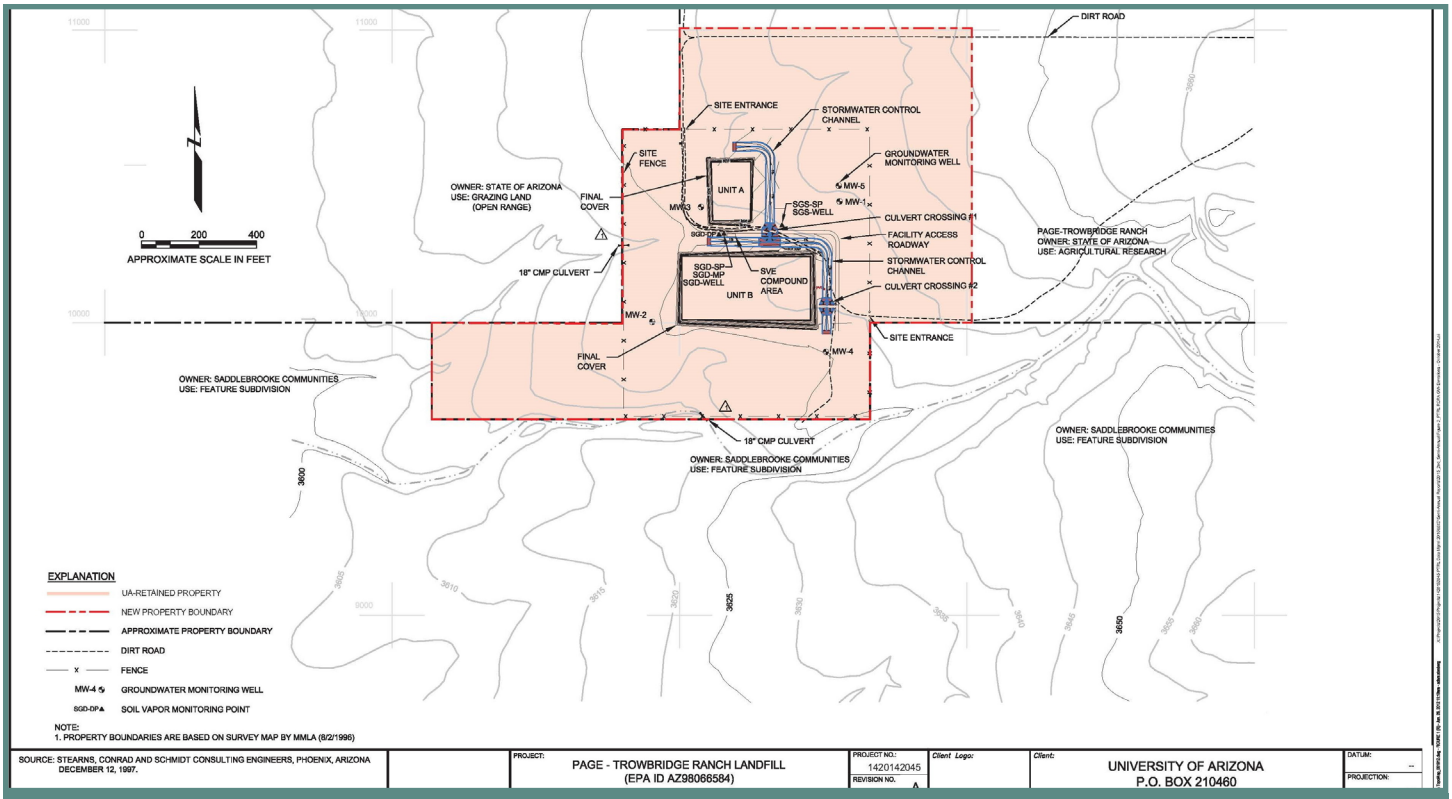
The University of Arizona (UA) manages the Page Trowbridge Ranch Landfill (PTRL), a closed hazardous waste landfill located north of State Highway 77, approximately seven miles west of Oracle and 30 miles north of Tucson. The PTRL is located in Township 9 South, Range 14 East, Gila and Salt River Base and Meridian, and includes the southern half of Section 27 and the northern half of Section 34. Land to the north and northeast of the PTRL is owned by the State of Arizona and is used as open range grazing land. The UA owns and uses the land to the north, northwest and east for agricultural research. Property owned by Robson Ranch Mountains, L.L.C., a developer, to the southwest, south, and southeast of the PTRL is used for residential development. There are over one hundred homes and a clubhouse constructed in the Saddlebrooke Resort Community.

UA used the PTRL to dispose of low-level radioactive material and chemical waste generated at UA, Northern Arizona University, Arizona State University, and Veterans Hospital in Tucson from the early 1960s through 1986. The chemical waste primarily consisted of solvents, ignitables, acids, bases, heavy metals, pesticides, and photographic compounds.



PTRL Project location



Landfill area sites A and area B locations.

A solar-powered soil vapor extraction (SVE) system was installed at the landfill and has been operating since June 2006 between Areas A and B. The system is used as a soil vapor monitoring system to detect potential releases from the landfill areas. If a release is detected, actions will be taken in advance of any contamination reaching ground water, which is at approximately 640 feet below ground surface (bgs). The system injects air into the soil through one well (SGD-Well) at a rate of approximately 43 $feet^3$/min and a depth of approximately 435 to 605 feet bgs, while soil vapor is extracted from another well (SGS-Well) at a rate of approximately 90 $feet^3$/min from a depth of approximately 98 to 225 feet bgs. The vapor is then directed through an activated carbon treatment system (two 2,000-pound units) where air emissions monitoring is conducted weekly, using a photoionization detector (PID), and samples are collected monthly to check for breakthrough of the granular activated carbon to determine when it needs to be replaced and to monitor the mass removal of any Volatile Organic Compounds (VOCs) from the subsurface.

In addition to the SVE wells, there are four active ground water wells used for monitoring chemical and radionuclide contaminants, as well as vapor monitoring points to measure VOCs. The ground water monitoring wells and soil vapor monitoring points are located within the fenced enclosure surrounding the two landfill areas. The ground water monitoring wells are finished with protective steel casings installed in cement with locking well head covers. Ground water monitoring wells MW-2, MW-3, MW-4, and MW-5 are approximately 800 feet bgs. For sample collection, a submersible pump was installed in each well, with power supplied by a generator. Six on-site soil vapor monitoring points, SGS-WELL, SGS-SP, SGD-WELL, SGD-SP, SGD-MP, and SGD-DP cover soil vapor monitoring intervals across a range of 75 to 600 feet bgs. In order to also use MW-2 and MW-5 as soil vapor monitoring points, inflatable packers were installed with soil vapor monitoring intervals extending to the ground water table. Ground water and soil vapor sampling are conducted semi-annually.

The facility is not located in a 100-year floodplain.

ADEQ issued a hazardous waste "post-closure" permit for the PTRL in 2001. This permit was renewed in 2011. It requires the UA to maintain the landfill for a post-closure period of not less than 30 years. On a quarterly basis, UA must inspect the condition of the landfill covers, each monitoring well, the SVE system, all survey monuments, storm water controls, fencing, and the roads. Repairs are to be made no later than the end of the quarter following the date of the inspection. In addition, UA must perform ground water monitoring and soil vapor sampling semi-annually; monitoring reports must be submitted to ADEQ within ninety days of the sampling event.

For translations or other communications aids, please email the Title VI Coordinator at Bingham.Ian@azdeq.gov.

Para traducciones u otras ayudas de comunicación, envíe un correo electrónico al Coordinador del Título VI al Bingham.Ian@azdeq.gov.